26580

elf atochem
ATO

Elf Atochem North America, Inc.
2000 Market Street, Philadelphia, PA 19103-3222
Phone: (215) 419-7000

Environmental Law Department

Direct Dial: (215) 419-7654
Telecopier: (215) 419-7597

CONFIDENTIAL BUSINESS INFORMATION

September 20, 1993

VIA UPS OVERNIGHT MAIL

Ms. Linda Beasley
Emergency Support Section
U.S. Environmental Protection Agency
77 West Jackson Boulevard
Chicago, Illinois 60604-3590

Re: Conservation Chemical Company of Illinois, Gary, IN

Dear Ms. Beasley:

Enclosed is the response of Elf Atochem North America, Inc. to EPA's 104 (e) Information Request with respect to the above Site. Please note that Pennwalt Corporation merged with M & T Chemicals, Inc. and Atochem Inc. on December 31, 1989 and, simultaneously with the merger, Pennwalt, the surviving corporation, changed its name to Atochem North America, Inc. On December 31, 1990, Atochem North America, Inc. changed its name to Elf Atochem North America, Inc.

Based upon the prior correspondence between Pennwalt and the Agency concerning this Site and in view of the Request being directed to Pennwalt at Wyandotte, Michigan, we have focused our investigation on that Pennwalt Michigan facility. We have recently learned that Conservation Chemical may have been a customer of M&T Chemicals. We are continuing to investigate whether there was a relationship between Conservation Chemical and M&T and the nature of that relationship, if any. We reserve the right to supplement this response should additional relevant information come to our attention.

As you can see from the enclosed responses and documentation, as well as our prior correspondence with the Agency, Pennwalt did not send materials to Conservation Chemical for treatment, storage or disposal nor to the best of Atochem's knowledge were any Pennwalt waste materials sent to the Site. The only relationship which our investigation to date reflects is the sale of useful commercial product by Pennwalt to Conservation Chemical.

The information set forth in Attachments 2, 3 and 4 is the confidential, proprietary business information of Elf Atochem and has been marked confidential.

Very truly yours,

Kathleen L. Petrilli
Counsel

KLP/sah
Enclosure

Response of Pennwalt Corporation
to 104 (e) Information Request
Dated July 23, 1993

1. Various persons at the Wyandotte, now Riverview facility of Elf Atochem North America, Inc. (Atochem) in Michigan have reviewed purchasing, shipping and other files for information potentially relevant to the questions raised in the subject Information Request. As set forth in the cover letter accompanying this response, Atochem has focused its review on its former Wyandotte, Michigan facility to which the Request was directed. Atochem is continuing its investigation, including its investigation of any potential relationship of M&T Chemical to the Site, and will supplement this response should it discover additional relevant information as to either the former Pennwalt Corporation or the former M&T Chemicals, Inc.

2. See answer to #1 and enclosed documents. (Attachment 1)

3. Atochem is without information as to others who may be able to provide more detailed information or additional responsive documents.

4. The EPA identification # for Atochem's Riverview facility is MID005363114.

5. Pennwalt did not to the best of Atochem's knowledge cause the release or threat of release of hazardous substances, pollutants, contaminants, or other materials at the Site and Atochem is without knowledge of other persons whose acts or omissions may have caused such release or threatened release.

6. To the best of Atochem's knowledge, Pennwalt had no arrangements with Conservation Chemical Company of Illinois or Norman Hjersted for the receipt, processing, storing, treatment or disposal of hazardous substances, pollutants, contaminants or materials at the Site. The only transactions between the Site and Pennwalt Corporation of which Atochem is aware are the sale by Pennwalt of useful commercial product to Conservation Chemical of Illinois. Documents reflecting the sale of product are attached.

7. See response to #6 and the enclosed documents.

8. Atochem is aware of no persons who have personal knowledge of the use, purchase, supply, etc. of hazardous materials at the Site.

9. To the best of Atochem's knowledge, Pennwalt did not arrange for disposal or treatment or transportation for disposal or treatment of hazardous substances, pollutants, contaminants or materials at the Site and does not know of others who may have.

10. From 1967 to present Atochem has carried comprehensive general liability insurance applicable to operations, including the Wyandotte/Riverview plant. A list of insurance by year is provided as Attachment 2 to this response. The insurance for each year consists of a primary insurer, one to two umbrella layer carriers, and a series of excess layer insurance policies. The addresses for these insurers are provided as Attachment 3 to this response. PLEASE NOTE THAT THE COMPANY ASSERTS A CLAIM OF BUSINESS CONFIDENTIALITY TO THE CONTENTS OF ATTACHMENT 2 AND ATTACHMENT 3. The question about whether coverage is provided for "sudden" and "non-sudden" environmental claims calls for a legal conclusion which we would respectfully abstain from giving. However, on a factual basis, this insurance from 1967 to present applied to property damage arising out of premises operations (among other coverages). Furthermore, the insurance policies in 1971 added the so called "pollution exclusion" standard form which had language purporting to state an exception for "sudden and accidental" releases. Thereafter, beginning in 1986, the policies carried the standard form "absolute pollution exclusion" which deleted the "sudden and accidental" language.

11. See Attached pro forma returns (Attachment 4), included in the U.S. Corporate Income Tax Returns filed by Elf Aquitaine, Inc. (FEIN 72-0628075). As the information contained in the pro forma returns is the confidential proprietary information of Atochem and not generally available to the public, Atochem hereby asserts a claim of confidentiality for the Returns. The Returns have been marked as confidential in accordance with the directions set forth in the Information Request.

12. See Attachment 5.

13. Not applicable

14. Not applicable

ATTACHMENT 1

AFFIDAVIT OF ALBERT POLIDORE
RE CONSERVATION CHEMICAL OF GARY, INDIANA

Commonwealth of Pennsylvania)
) SS:
County of Philadelphia)

I, Albert Polidore, being duly sworn, do hereby state as follows:

1. I am the Financial Manager for the Inorganic Chemicals Division of Pennwalt Corporation and have been employed by Pennwalt Corporation since 1968 in the Inorganic Chemicals Division or its predecessors the Indchem Division and the Industrial Chemicals Division of Pennwalt Corporation.

2. As a result of my employment with the Inorganic Chemicals Division of Pennwalt Corporation since 1968, I have personal knowledge of the products produced and sold by the Division.

3. Pennwalt Corporation had produced ferric chloride as a commercial product, to my knowledge, since at least 1968 up until 1984 at its plant in Wyandotte, Michigan.

4. The copy of the month and year to date report attached hereto and dated 12/76 for the shipment of ferric chloride to customers from Pennwalt Corporation's Wyandotte, Michigan Plant (Report) is a record made by Pennwalt Corporation in the regular course of business.

5. The Report includes a 1976 sale of the product ferric chloride to Conservation Chemical, Gary, Indiana.

6. The copies of tags attached hereto are true and correct copies of the tags used by Pennwalt Corporation to ship ferric chloride to its customers in 1976.

7. The attached literature and Material Safety Data Sheet were prepared by Pennwalt Corporation in connection with its sale of the product ferric chloride.

The above is true and correct to the best of my knowledge, information and belief.

A. M. Polidore

Sworn to and Subscribed
before me this 31st
day of March 1989.

Marie A. Gallagher

NOTARIAL SEAL
MARIE A. GALLAGHER, Notary Public
City of Philadelphia, Phila. County
My Commission Expires August 5, 1990

PENNWALT
CORPORATION

FERRIC CHLORIDE

PENNWALT CORPORATION, Industrial Chemicals Department, Phila., Pa. 19102

SAFETY AND FIRST AID
ANHYDROUS FERRIC CHLORIDE
LIQUID FERRIC CHLORIDE

PENNWALT FERRIC CHLORIDE

INTRODUCTION

Ferric chloride is a versatile and a somewhat unusual chemical. Its high floc-forming power has given it widespread application as an efficient coagulant in the treatment of sewage and industrial waste. It has proved to be an excellent catalyst for a variety of organic reactions, including condensation, polymerization and chlorination. Its usefulness with a wide range of solvents, and its difference in solubility from one medium to another, are valuable properties in these applications. It is also used extensively as an etchant in photoengraving, in forming the iron salts employed as mordants in dyeing, in making paint pigments and a wide variety of special products, and in other applications.

Pennwalt produces two forms of ferric chloride—an aqueous solution containing 39% to 45% $FeCl_3$, and an anhydrous form containing 98% $FeCl_3$. Aside from those cases in which the anhydrous material is required by the application, a careful analysis of the user's requirements will determine which form of ferric chloride is more advantageous. Your Pennwalt representative will be glad to be of assistance in such analysis.

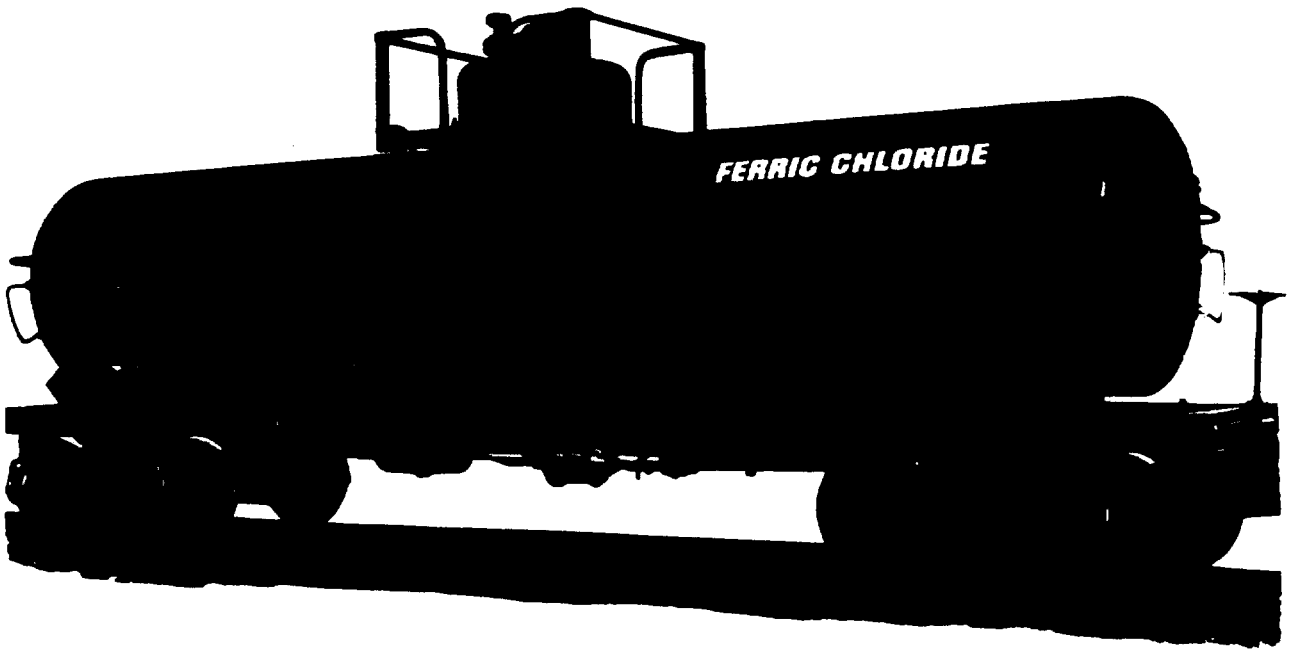


FIGURE 1 — RUBBER-LINED TANK CAR

LIQUID FERRIC CHLORIDE

Properties

Pennwalt liquid ferric chloride is a dark brown, somewhat oily-appearing solution of $FeCl_3$ in water. The concentration of the solution shipped at a given time is determined by two factors. First, of course, the $FeCl_3$ content of the solution should be as high as possible, to keep the transportation cost per unit of $FeCl_3$ as low as possible. Second, crystallization of the ferric chloride due to low temperatures during transit or storage is troublesome, and concentrations are limited by the ambient temperatures prevailing at the time. For this reason, the shipping strength of Pennwalt liquid ferric chloride solutions is varied from 45% in summer to 39% in winter.

Shipping Containers

Pennwalt liquid ferric chloride is shipped in rubber-lined tank cars and tank trucks, in the quantities shown in Table 2.

TABLE 1—PROPERTIES OF LIQUID FERRIC CHLORIDE

Ferric Chloride Content*		39% to 45%
Molecular Weight		162.22
Form and Color		Dark brown liquid
Specific Gravity		1.4 to 1.5
Freezing Points (approx.)		
Concentration:	39%	9°F
	40	14
	41	23
	42	28
	43	36
	44	45
	45	50

*Concentration is adjusted seasonally to avoid crystallization during transit. During periods of sustained, severely cold weather, concentration may be lowered to 39%.

TABLE 2—PENNWALT LIQUID FERRIC CHLORIDE SHIPMENTS

Shipping Container	Volume	Approx. Shipping Weight
Tank Cars, Rubber Lined	4,000 gal.	23 tons
	6,000 gal.	34 tons
	8,000 gal.	46 tons
	10,000 gal.	57 tons
Tank Trucks, Rubber Lined	Quantity dependent upon applicable state truck weight regulations.	

3. Connect the liquid unloading assembly to the top of the liquid unloading connection of the tank car, location "A", as shown in Figure 2. *Never connect the air supply line to the car before connecting the liquid unloading line.*

4. Connect the air supply line to car at location "B". (Air supply should be free of oil or other foreign matter.) The air connection flange on some tank cars has four 5/8" bolts on a $5\frac{1}{2}$" B.C., while on other cars it has three 5/8" bolts on a $5\frac{1}{2}$" B.C., spaced at 120 degrees. The air supply line flange should be drilled to fit either type of connection flange.

5. Slowly apply air pressure of not more than 30 lbs. gage until the liquid flows into the storage tank at a normal rate, and maintain this pressure. A rapid drop in pressure and the sound of air rushing through the liquid eduction pipe will indicate when the tank car is empty. Maintain air pressure until the liquid unloading assembly and the line to the storage tank are empty. Then shut off the air supply and open the relief valve to release any pressure that may be remaining in the tank car.

6. Disconnect the air line and replace the safety vent cap assembly at location "B". Carefully disconnect the liquid unloading assembly, allowing it to drain thoroughly if it has not already done so. Replace the blind flange at location "A".

All employees performing the unloading operation should strictly observe the safety measures for handling ferric chloride, and should be familiar with the proper first aid procedures (see page 12).

Unloading Liquid Ferric Chloride Tank Trucks

Pennwalt liquid ferric chloride is shipped in rubber-lined steel tank trucks. Receiving practices vary widely, and tank truck customers should consult the Pennwalt Technical Service Department for procedures suited to their needs.

In general, however, tank trucks are unloaded by applying air pressure to the tank in much the same way that tank cars are unloaded. Clean compressed air should be available from a source capable of delivering a minimum of 25 cubic feet of air per minute at a pressure of 30 psig. (All tank trucks do not incorporate compressed air systems for unloading.) The air hose should be equipped with the male half of a $\frac{3}{4}$-inch Kelly-type snap-on fitting.

At the time of the first tank truck shipment to a given location, Pennwalt determines the length and size (2" or 3") of unloading hose required. Tank trucks will then carry ample hose for the installation. Notify Pennwalt immediately if hose requirements change. A standard 2", 6"-diameter flange, four holes on a $4\frac{3}{4}$" bolt circle, is used on the 2" hose. A standard 3", $7\frac{1}{2}$"-diameter flange, four holes on a 6" bolt circle, is used on the 3" hose.

The same safety measures should be observed for tank truck unloading as for tank car unloading.

ANHYDROUS FERRIC CHLORIDE

Properties

Pennwalt anhydrous ferric chloride is supplied in the form of greenish-black iridescent crystals. This form is extremely hygroscopic, and dissolves easily in water to form solutions containing up to 45 per cent $FeCl_3$ at room temperatures above 55°F. (See Figure 3.) Its important physical properties are given in Table 4.

FIGURE 3 — SOLUBILITY OF FERRIC CHLORIDE AT VARIOUS TEMPERATURES

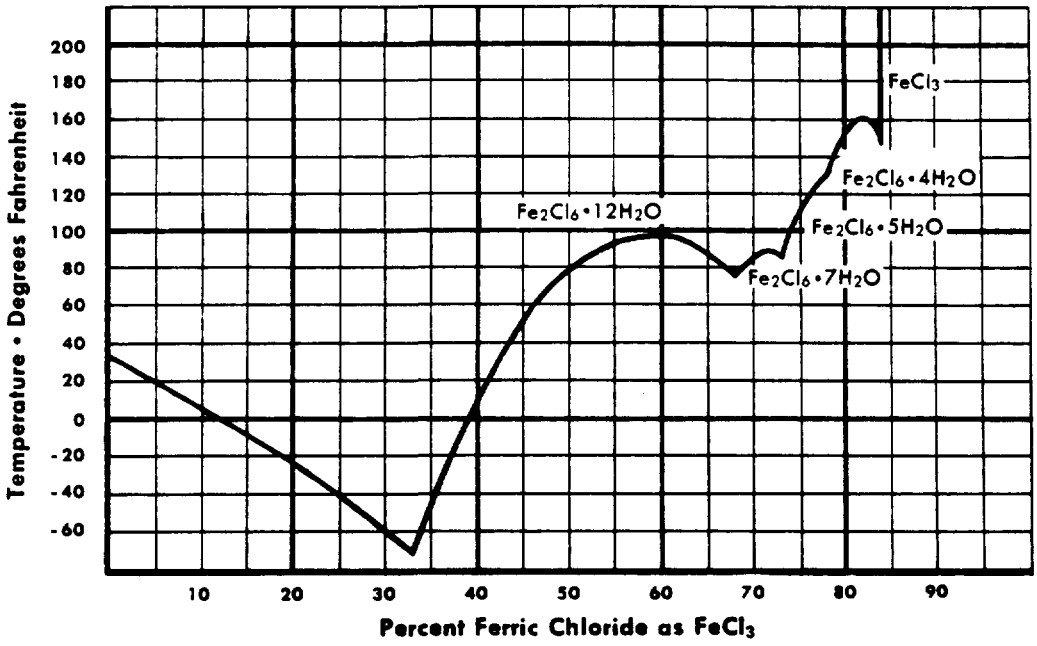


TABLE 4 — PROPERTIES OF ANHYDROUS FERRIC CHLORIDE

Ferric Chloride Content	Approx. 98%
Molecular Weight	162.22
Form and Color	Greenish-black iridescent crystals
Specific Gravity	2.804
Melting Point	282°C
Heat of Solution	353 BTU/lb

Shipping Containers

Pennwalt anhydrous ferric chloride is shipped in lightweight, non-returnable steel lever-lock drums. (See Table 5.) Drum openings are fitted with air-tight gaskets to prevent moisture absorption by the ferric chloride during shipping and storage.

FIGURE 4 – TYPICAL SHIPPING DRUMS FOR ANHYDROUS FERRIC CHLORIDE

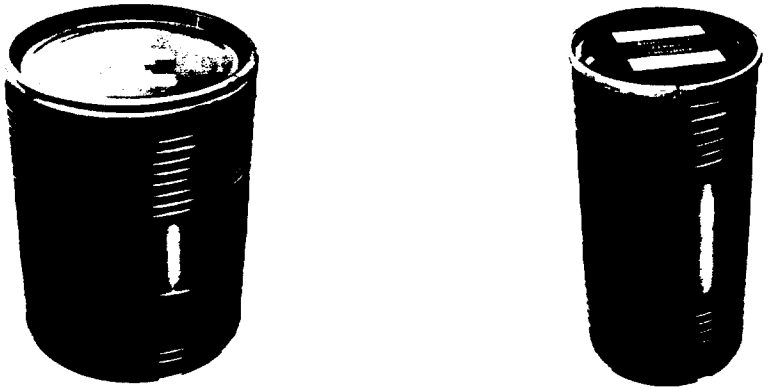


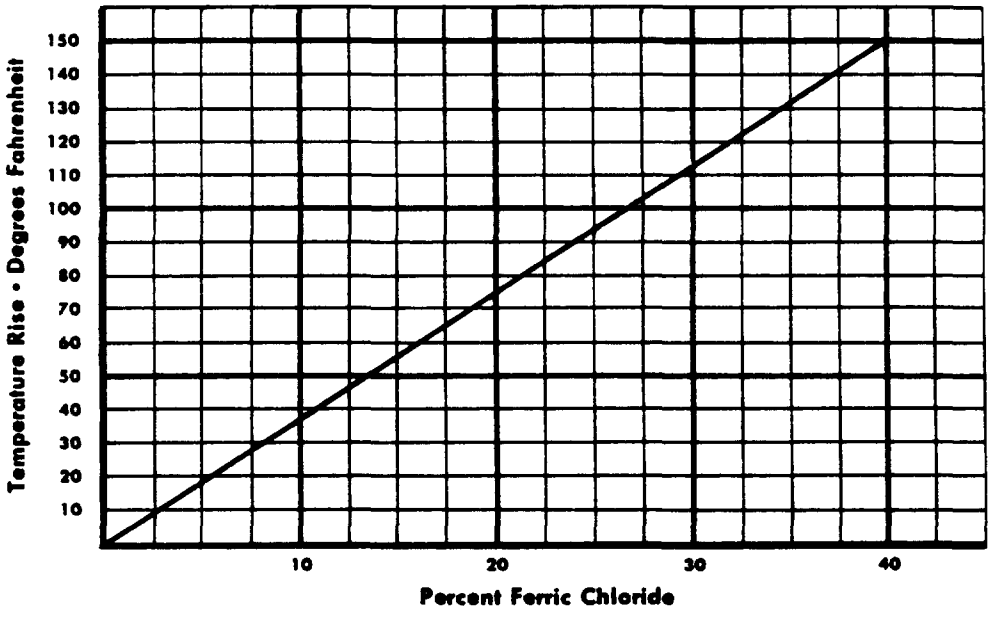
TABLE 5 – ANHYDROUS FERRIC CHLORIDE DRUMS

Type and Volume of Drum	Gross	Tare	Net
40 gallon steel full open head	372 lb.	22 lb.	350 lb.
18 gallon steel full open head	146 lb.	11 lb.	135 lb.

Storage and Handling

Unopened drums of anhydrous ferric chloride may be stored in a dry area for a reasonable length of time. When the material is to be used in the process in

FIGURE 5 – HEAT OF SOLUTION OF ANHYDROUS FERRIC CHLORIDE



its anhydrous form, entire drums should be used at one time. If this is impossible, open drums only in a dry area and close them tightly again as soon as possible. When the material is used in aqueous solution, it is recommended that stock solutions be prepared from full drum quantities. These solutions can then be diluted and used as needed.

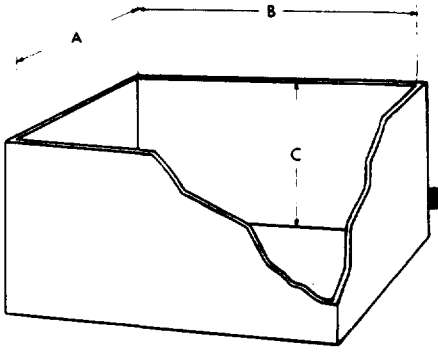
Making Stock Solutions

Anhydrous ferric chloride releases a substantial amount of heat when it is dissolved. The temperature rise that results from making solutions in concentrations of up to 40% is shown in Figure 5. In addition, ferric chloride solutions are corrosive to many common materials of construction.

For these reasons, tanks for making stock solutions (usually from 20% to 40% $FeCl_3$) must be constructed to resist both heat and corrosion. Steel-reinforced concrete, lined with rubber and faced with an acid-proof brick bonded with an acid-proof mortar, provides satisfactory service. An excellent mortar for ferric chloride solution tanks is Pennwalt Pennchlor® acid-proof cement. If solutions stronger than 40% $FeCl_3$ are to be made, or if other unusual conditions exist, consult the Pennwalt Technical Service Department for further recommendations on materials of construction.

FIGURE 6 — CAPACITIES OF TYPICAL TANKS

RECTANGULAR TANKS



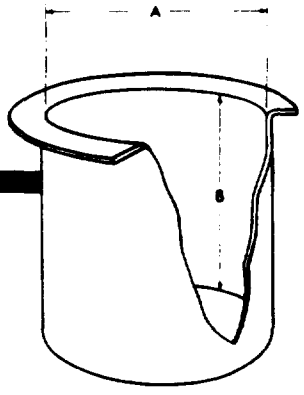
Capacity Gallons*	A	B	C
100	2'-0"	3'-0"	3'-2½"
200	3'-0"	4'-6"	3'-0"
300	3'-6"	5'-3"	3'-2"
400	4'-0"	6'-0"	3'-2½"
500	4'-0"	6'-0"	3'-9"
600	4'-0"	6'-0"	4'-4"
700	4'-3"	6'-6"	4'-4"
800	4'-3"	6'-6"	4'-10"
900	4'-6"	7'-0"	4'-10"
1000	5'-0"	7'-6"	4'-8"

*Dimensions allow for one Ft. splash space

CYLINDRICAL TANKS

Capacity Gallons*	A	B
100	3'-0"	3'-0"
200	3'-6"	3'-9"
300	4'-0"	4'-2½"
400	4'-3"	4'-9"
500	4'-6"	5'-1½"
600	5'-0"	5'-1½"
700	5'-6"	5'-0"
800	5'-6"	5'-6"
900	6'-0"	5'-3"
1000	6'-0"	5'-9"

*Dimensions allow for one Ft. splash space

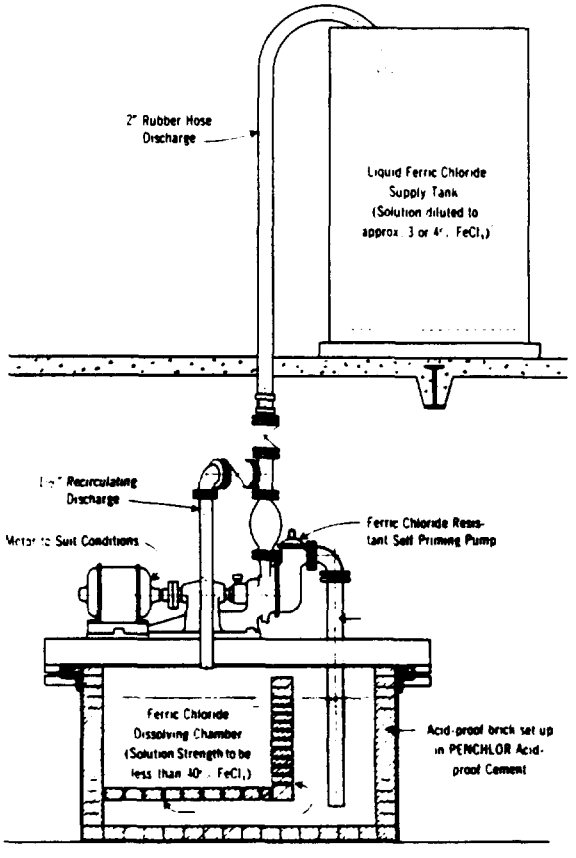


The size of the solution tank will of course depend upon the usage requirements. In any case, however, the tank should be large enough to hold at least a 12-hour supply of ferric chloride solution, and sized to enable the anhydrous material to be dissolved in full drum units.

To aid in the planning of facilities, the capacities of typical tanks are given in Figure 6, and the amounts of water needed to prepare solutions of various strengths from full drums of anhydrous material are given in Table 6. It is recommended that at least one foot of outage be left in the tank for mixing.

While methods of preparing aqueous solutions from anhydrous ferric chloride may differ in detail, there are basically three types of facilities. Where gravity flow can be employed to move the solution from the tank, a simple tank provided with mechanical agitating or mixing equipment can be used. If gravity cannot be employed, an air-actuated transfer device (a vacuum lift or a blow case) or a pump is required. Where air is used for transfer, it may in addition be used for agitating the ferric chloride solution prepared in a simple tank, if a slight increase in ferric oxide content will not interfere with the intended use. Where a pump is used to transfer the solution from the tank, the same pump can provide motive power for a recirculation-type system.

FIGURE 7 – TYPICAL RECIRCULATION-TYPE DISSOLVING SYSTEM



Mechanical mixing system. The simplest method of preparing solutions is to pour out and mix the contents of a drum of anhydrous ferric chloride into a tank partially filled with water, and add the remaining water while continuing to mix the solution.

The ferric chloride can also be dissolved directly out of the drum with this system, by either of two methods: (1) Place the drum on a rack or suspend it over the solution tank. Punch large holes in the sides and bottom of the drum. Open the top of the drum and run water through the drum. Continue until the proper level is reached in the solution tank. Agitate the solution to insure uniformity and to prevent local overheating and damage to heat sensitive equipment. (2) Add the proper amount of water to the solution tank. Punch holes in the sides and bottom of the drum. Lower the drum into the solution tank and allow the ferric chloride to dissolve. Agitate the solution during dissolving to insure uniformity.

Air mixing system. (Use only if a slight increase in ferric oxide content will not interfere with the intended use.) Equipment and procedures for this system are identical to those for mechanical mixing systems, except that air mixing is substituted for mechanical mixing. Care must be taken to be sure that the solution is adequately agitated during preparation. When this is done, the air mixing system offers the added advantage of cooling the solution.

Recirculation system. A recommended design for this type of system is shown in Figure 7. In preparing solutions, the proper amount of water is first put into the solution tank. The ferric chloride is then poured into the dissolving chamber of the tank, or holes are punched in the sides and bottom of the drum and it is placed in the dissolving chamber. The recirculating valve is opened and the valve to the process supply tank is closed. The liquid is then recirculated with the pump until the ferric chloride is dissolved and a homogeneous solution is formed.

If additional information on making solutions is required, consult the Pennwalt Technical Service Department.

TABLE 6—PREPARING FERRIC CHLORIDE SOLUTIONS

Strength of Solution, % Ferric Chloride	Dissolving one 135-lb. drum	Dissolving two 135-lb. drums	Dissolving one 350-lb. drum	Dissolving two 350-lb. drums
	Gal. of Water	Gal. of Water	Gal. of Water	Gal. of Water
5%	301.8	603.6	782.4	1564.8
10%	142.9	285.8	370.6	741.2
15%	90.0	180.0	233.3	466.6
20%	63.5	127.0	164.7	329.4
25%	47.7	95.4	123.5	247.0
30%	37.1	74.2	96.0	192.0
35%	29.5	59.0	76.5	153.0
40%	23.8	47.6	61.8	123.6

Determining Solution Strength

A quick method of determining the approximate strength of a ferric chloride solution is to determine the specific gravity of the solution with a hydrometer, and read the concentration from Table 7. Details of a more accurate analytical method are available on request from the Pennwalt Technical Service Department.

TABLE 7 – SPECIFIC GRAVITY OF $FeCl_3$ SOLUTIONS AT 20°/4°C (68°/39°F)

% $FeCl_3$	Specific Gravity	Degrees Baumé	% $FeCl_3$	Specific Gravity	Degrees Baumé
1	1.009	1.3	14	1.125	16.1
2	1.017	2.4	15	1.135	17.2
3	1.026	3.7	16	1.144	18.3
4	1.034	4.8	17	1.154	19.4
5	1.043	6.0	18	1.164	20.4
6	1.052	7.2	19	1.174	21.5
7	1.060	8.2	20	1.185	22.6
8	1.069	9.4	21	1.195	23.7
9	1.077	10.4	22	1.206	24.6
10	1.086	11.5	23	1.216	25.8
11	1.094	12.5	24	1.226	26.7
12	1.105	13.8	25	1.237	27.8
13	1.115	15.0			

SAFETY AND FIRST AID

Safety. Great care should be taken to avoid the contact of anhydrous ferric chloride with any part of the body, and especially with the eyes. The moisture present in the eyes or on the skin is enough to release sufficient heat to cause severe damage. Ferric chloride solutions should be handled with the same care as acid solutions, since they can cause burns similar to those caused by acids. They are also injurious to clothing and cause difficult-to-remove stains. Personnel handling anhydrous ferric chloride or ferric chloride solutions should wear overalls, rubber apron, rubber gloves and chemical goggles. Floors, walls and equipment which are subject to splashing should be protected with corrosion-resistant paint or rubber mats.

First Aid. If *anhydrous ferric chloride* comes in contact with the skin or clothing, *do not* wash immediately with water. Severe burns can result from the great amounts of heat produced when anhydrous ferric chloride is dissolved. Wipe off the excess ferric chloride first with a cloth, and then wash with large amounts of water.

If *liquid ferric chloride* comes in contact with the skin or clothing, wash if off immediately and thoroughly with water.

In cases of splashes of liquid ferric chloride in the eyes, flush immediately and thoroughly with large amounts of water and then rinse with a weak solution of sodium bicarbonate or boric acid. Consult a physician immediately.

SALES OFFICES

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PENNSALT CHEMICALS OF CANADA LTD.

PENNWALT CORPORATION, Industrial Chemicals Department, Phila., Pa. 19102

S-202A 2m1071 Printed in U. S. A.

MATERIAL SAFETY DATA SHEET

"ESSENTIALLY SIMILAR" TO OSHA FORM 20

FORM 4040 (Rev. 8-81)

ADDRESS: Pennwalt Corporation
Three Parkway
Philadelphia, PA 19102

Emergency Phone Number(s)
Business: 313-285-9200
Other: 215-587-7709

PRODUCT IDENTIFICATION

Pennwalt Product Name: LIQUID FERRIC CHLORIDE

Pennwalt Code No.: W-4120

Chemical Name and Molecular Formula: Iron Chloride, Cl_3Fe ($FeCl_3$)

CAS No.(s): 7705-08-0

Synonyms: Ferric Chloride Solution

Chemical Family: Iron Salt Solution

HAZARDOUS INGREDIENTS

MATERIALS OR COMPONENTS	% w/w	HAZARD DATA (TLV, LD50, LC50, etc.)
Ferric Chloride	38½ to 45	See Toxicity Section

SHIPPING INFORMATION

T/T: RQ Ferric Chloride Solution; Corrosive Material; UN 2582; Corrosive Placards; Crude Chloride of Iron - Not less than 50% Water.

T/C: RQ Ferric Chloride Solution; Corrosive Material; UN 2582; Placarded Corrosive; Crude Chloride of Iron - Not less than 50% Water.

PHYSICAL PROPERTIES

Boiling Point/Range	Melting Point	Freezing Point	Molecular Weight (Calculated)
110 °C 230 °F	°C °F	°C °F	162.206 as $FeCl_3$

Specific Gravity (H_2O=1)	Vapor Pressure (mm Hg)	Vapor Density (Air=1)
40% Soln. = 1.432 @ 17.5 °C	@ °C °F	

Solubility in H_2O	% Volatiles by Volume	Evaporation Rate	Appearance and Odor	Other
infinite if pH less than 5.0	60	☐ Ether = 1 ☐ Water = 1 ☐ Butylacetate = 1		

FIRE AND EXPLOSION DATA

Flash Point	Test Method	Flammable Limits	Autoignition Temperature/Fire Point
°C °F	None	Lower None % Upper %	None °C °F

DOES NOT BURN

EXTINGUISHING MEDIA

☐ Water-spray ☐ Water-fog ☐ Water stream ☐ CO_2 ☐ Dry chemical ☐ Alcohol foam ☐ Foam ☐ Earth or sand

SPECIAL FIRE FIGHTING PROCEDURES

☐ Do not enter building ☐ Allow fire to burn ☐ Water may cause frothing ☐ Do not use water

UNUSUAL FIRE AND EXPLOSION HAZARDS

☐ Dust explosion hazard ☐ Sensitive to shock ☐ Contamination ☐ Temperature ☐ Other (specify):

REACTIVITY DATA

STABILITY

☐ Stable ☐ Unstable

CONDITIONS CONTRIBUTING TO INSTABILITY

☐ Thermal decomposition ☐ Photo degradation ☐ Polymerization ☐ Contamination

INCOMPATIBILITY - Avoid contact with

☐ Strong acids ☒ Strong alkalis ☒ Strong oxidizers ☐ Other (specify): Material is acidic

HAZARDOUS DECOMPOSITION PRODUCTS - THERMAL AND OTHER (list)

CONDITIONS TO AVOID

☐ Heat ☐ Open flames ☐ Sparks ☐ Ignition sources ☐ Other (specify):

SPILL OR LEAK

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED

☒ Flush with water ☐ Absorb with sand or inert material ☐ Neutralize ☐ Sweep or scoop up and remove ☐ Keep upwind. Evacuate enclosed spaces. ☒ Prevent spread or spill

☐ Dispose of immediately ☐ Other (specify):

WASTE DISPOSAL METHOD - *Consult federal, state, or local authorities for proper disposal procedures.* Can be wasted to sewage system if large volume of dilution water is available, consult local authorities first.

CONTINUED ON REVERSE SIDE ▶

12/11/81

PENNWALT

Liquid FERRIC CHLORIDE

WARNING: CAUSES EYE IRRITATION

Avoid contact with eyes. Wash thoroughly after handling. Wear goggles and rubber gloves. Causes stains.

FIRST AID: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes.
Call a physician.

IN CASE OF SPILL: Dike to prevent spread of spill. Consult Federal, State or Local disposal authorities for approved procedures.

Spills of 200 Gallons or more must be reported as soon as possible to the U. S. Coast Guard National Response Center (800-424-8802).

Liquid FERRIC CHLORIDE is highly corrosive to all common metals.

Pennwalt Corporation
Three Parkway, Philadelphia 19102

2-4120T-01

TECHNICAL DATA

PENNWALT CORPORATION

PENNWALT BUILDING, THREE PARKWAY, PHILADELPHIA, PA. 19102 • (215) 587-7000

INDUSTRIAL CHEMICALS DEPARTMENT SPECIFICATION SHEET 4120

LIQUID FERRIC CHLORIDE

(Water Solution of Ferric Chloride)

SPECIFICATIONS

Analysis:

	Typical Impurities
Ferric Chloride, $FeCl_3$	*
Ferrous Chloride, $FeCl_2$	0.14%
Hydrochloric Acid, HCl	0.18%
Insoluble matter (anhydrous basis)	0.03%

*Concentration is adjusted seasonally to avoid crystallization during transit. During sustained periods of extremely cold weather, concentration may drop to 38.5%. Normal range is 39% to 46%.

OTHER PROPERTIES

Form and Color: Dark Brown Liquid

Average crystallization temperatures and densities of normal shipping concentrations:

Conc. %	Cryst. Temp., °F	Pounds per Gallon
39	7	11.8
40	14	11.9
41	21	12.0
42	28	12.2
43	35	12.3
44	42	12.4
45	48	12.6
46	55	12.7

TECHNICAL DATA

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INDUSTRIAL CHEMICALS DEPARTMENT SPECIFICATION SHEET 4120

LIQUID FERRIC CHLORIDE

(Water Solution of Ferric Chloride)

SPECIFICATIONS

Analysis:

Ferric Chloride, $FeCl_3$	39.0%	minimum*
Ferrous Chloride, $FeCl_2$	0.5%	maximum
Hydrochloric Acid, HCl	0.9%	maximum
Insoluble matter (anhydrous basis)	0.2%	maximum

*Concentration is adjusted seasonally to avoid crystallization during transit. During sustained periods of extremely cold weather, concentration may drop to 38.5%. Normal range is 39% to 46%.

OTHER PROPERTIES

Form and Color: Dark Brown Liquid

Average crystallization temperatures and densities of normal shipping concentrations:

Conc. %	Cryst. Temp., °F	Pounds per Gallon
39	7	11.8
40	14	11.9
41	21	12.0
42	28	12.2
43	35	12.3
44	42	12.4
45	48	12.6
46	55	12.7

TECHNICAL DATA

PENNWALT
CHEMICALS ■ EQUIPMENT
HEALTH PRODUCTS

THREE PARKWAY, PHILADELPHIA, PENNSYLVANIA 19102

INORGANIC CHEMICALS DIVISION

Effective: November 1, 1980
Supersedes: June 23, 1980

04120

LIQUID FERRIC CHLORIDE

$FeCl_3$

GENERAL DESCRIPTION

Solution of Ferric Chloride in water. This product produced in Wyandotte, MI

SPECIFICATIONS — ANALYSIS

	% by Weight — Typical
Ferric Chloride $FeCl_3$	38.5 to 45*
Ferrous Chloride $FeCl_2$	0.14
Hydrochloric Acid HCl	0.18
Insoluble (Anhydrous Basis)	0.03

**Concentration is adjusted seasonally to avoid crystallization during transit.*

PROPERTIES

Form and Color: Dark Brown Liquid.
Corrosive to common metals.
Density: 11-12 lbs/gal.
Specific Gravity: 1.4 to 1.5

Approximate saturation concentration at various temperatures.

Conc. %	Temp. °F	Conc. %	Temp. °F
39	7	43	35
40	14	44	42
41	21	45	48
42	28		

CONTAINERS

Tank Trucks (Rubber lined) — approximately 3,500 gal.
Tank Cars (Rubber lined) — 4, 6, 8, 10, 18, 20 thousand gallon cars.

SHIPPING

Freight Classification:

Tank Trucks: RQ Ferric Chloride Solution; Corrosive Material; UN 2582 Corrosive Placards; Crude Chloride of Iron — Not less than 50% water.

Tank Cars: RQ Ferric Chloride Solution; Corrosive Material; UN 2582; Placarded Corrosive; STCC 4932342; Crude Chloride of Iron — Not less than 50% water.

MISCELLANEOUS

CAS No.: 7705-08-0

SALES OFFICES

SANTA ANA, CA
714-835-1802

TACOMA, WA
206-572-5500

PORTLAND, OR
503-238-7230
800-547-6551

ATLANTA, GA
404-393-4540

DETROIT, MI
313-386-0300

WAYNE, PA
215-688-2601

ST LOUIS, MO
314-725-8394

TECHNICAL SERVICES OFFICES

TECHNICAL SERVICE EAST
Three Parkway
Phila., PA 19102
215-587-7710

TECHNICAL SERVICE WEST
500 N. E. Multnomah Street
Suite 880
Portland, OR 97232
503-238-7230

SHIPMENTS TO CUSTOMERS
CUSTOMER / PRODUCT

CUSTOMER / PRODUCT	CUSTOMER PRODUCT DESCRIPTION	CITY TERR ST SIZE TYPE UNIT	CM UNITS	CM AMOUNT	YTD UNITS	YTD AMOUNT	LPP
14519.50	CLINTON CORN PROCESSING	CLINTON IA					
002090	LIQ CAUSTIC SODA 50 S	10 M G TC LB76	903,119	64,920.43	4,680,344	335,632.62	11
008030	CHLORINE CONTAINERS	TGA- TC LB			90,000	7,200.00	09
			903,119 *	64,920.43 *	4,770,344 *	342,832.62 *	
		14519 TOTALS	903,119	64,920.43	4,770,344	342,832.62	
14534.15	CLINTON VILLAGE OF	CLINTON MI					
008056	CHLORINE CYLINDERS	100 CYL LB	700	140.00	7,700	1,540.00	11
			700 *	140.00 *	7,700 *	1,540.00 *	
		14534 TOTALS	700	140.00	7,700	1,540.00	
16055.50	CONSOLIDATED PACKAGING	NORAGE MI					
008034	CHLORINE CONTAINERS	TGA CONT LB			72,000	9,360.00	11
			*	*	72,000 *	9,360.00 *	
		16055 TOTALS			72,000	9,360.00	
16062.20	CONSERVATION CHEM CORP	GARY IN					
008040	CHLORINE BULK	55T TC LB			[redacted]	18,173.00	08
041207	LIQUID FERRIC CHLORID	MISC TK LBAM			[redacted]	853.97	04
			*	*	308,977 *	19,026.97 *	
		16062 TOTALS			308,977	19,026.97	
16065.05	CONSOLIDATED PAPERS INC	APPLETN WI					
008040	CHLORINE BULK	55T TC LB			30,450-		08
			*	*	30,450-*	*	
16065.65	CONSOLIDATED PAPERS INC	WISN RDS WI					
002090	LIQ CAUSTIC SODA 50 S	10 M G TC LB76	60,926	4,147.66	1,127,287	77,076.94	11
008040	CHLORINE BULK	55T TC LB	220,000	13,835.80	1,865,820	118,490.15	11
			280,926 *	17,983.46 *	2,993,107 *	195,567.09 *	
		16065 TOTALS	280,926	17,983.46	2,966,657	195,567.09	
16155.40	*CONSUMERS PLUMBING & M	BEDFORD OH					
017214	SENTRY	25S PAIL PAIL			55,032	35,591.40	06
010234	SUREFLOC	6X8 CASE CASE			30	476.53	06
			*	*	59,062 *	36,067.93 *	
		16155 TOTALS			59,062	36,067.93	
16766.15	COSDEN OIL & CHEM	CLNT CT IL					
006062	POTASSIUM PERSULFATE	225# DRUM LB	8,550	3,151.54	84,900	30,427.15	11

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Pennwalt Corporation
Three Parkway, Philadelphia 19102

2-4120T-01

PENNWALT

SAMPLE

FERRIC CHLORIDE LIQUID

CAR _____ **SP.GR.** _____

DATE _____ **$FeCl_3$** _____% **$FeCl_2$**_____%

WARNING: CAUSES EYE IRRITATION. MAY CAUSE ALLERGIC SKIN REACTION.

Avoid contact with eyes. Avoid prolonged or repeated contact with skin. Wash thoroughly after handling. Wash clothing before reuse. Wear goggles or safety glasses.

FIRST AID: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician. **In case of skin contact,** immediately wash skin with soap and plenty of water.

In case of spill, flush area with plenty of water. LIQUID FERRIC CHLORIDE is highly corrosive to all common metals.

DOT DESCRIPTION: Crude Chloride of Iron—not less than 50% water. 2-4120S-02

Pennwalt Corporation • Three Parkway, Philadelphia 19102

PENNWALT

SAMPLE

FERRIC CHLORIDE LIQUID

CAR _____ **SP.GR.** _____

DATE _____ **$FeCl_3$** _____% **$FeCl_2$**_____%

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DOT DESCRIPTION: Crude Chloride of Iron—not less than 50% water. 2-4120S-02

Pennwalt Corporation • Three Parkway, Philadelphia 19102

CONSOLI[illegible]	MONRO[illegible]	MI			72,000	9,3[illegible]	
CHLORINATED PARAFFINS	TON CONT	LB		*	72,000	* 9,3[illegible]	*
					72,000		
	16055 TOTALS						
[illegible]VATION CHEM CORP	GARY	IN			290,000		
	55T TC	LB			18,977		
CHLORINE BULK	MISC TK	LHAW		*	308,977	*	*
SQUID FERRIC CHLORID					[illegible]		
	16062 TOTALS						
CONSOLIDATED PAPERS INC	APPLETN	WI			30,450-		
CHLORINE BULK	55T TC	LB		*	30,450-	*	
[illegible]IDATED PAPERS INC	WSN RDS	WI	4,147.66		1,127,287		
[illegible] CAUSTIC SODA 50 S	10 M G TC	LB76	13,835.80		1,869,820		
CHLORINE BULK	55T TC	LB	17,983.46	*	2,997,107	*	
			17,983.46		2,866,657		
	16065 TOTALS						
[illegible]SUMERS PLUMBING & H	BEDFORD	OH			59,032		
[illegible]NITRY	25S PAIL	PAIL			30		
SUREFLOC	6X8 CASE	CASE		*	59,062	*	
					[illegible]		
	16155 TOTALS						
[illegible]DEN OIL & CHEM	CLNT CT	IL	3,151.54		84,900		
POTASSIUM PERSULFATE	225# DRUM	LB					

REGION V
SUPERFUND DOCUMENT MANAGEMENT SYSTEM (SDMS)
CONFIDENTIAL BUSINESS INFORMATION

SITE NAME: CONSERVATION CHEMICAL

PRP AFFILIATION: ELF ATOCHEM

DOCUMENT TYPE:

X Financial Statements
X Insurance Information
X Tax Returns

____ Other: SHARE AND MERGER INFORMATION

IS THIS DOCUMENT PART OF ANOTHER DOCUMENT?

____ Yes; Document Title: _____

____ No